



HIGH SCHOOL AND UNIVERSITY
MATRICULATION EXAMINATIONS BOARD.
DEPARTMENTAL EXAMINATIONS, 1928.

ARITHMETIC 1.

Time—Three hours.

Values.

- 12 **1.** { I hold a note dated May 1st, 1928, promising to pay
 Either { me \$500 in three months with interest at 9% per
 { annum. If my banker consents to discount it for
 { me on June 4th at 8%, what sum should he place to
 { my credit?

- { On April 6, 1926, a man bought a farm for \$7500,
 { paying \$5000 cash and giving a note for the re-
 { mainder bearing interest at 6% per annum with
 { the privilege of paying all or any part of it at any
 { time. The following payments were made and
 { were endorsed on the note by the payee: Oct. 6,
 { 1926, \$500; June 6, 1927, \$50; Oct. 6, 1927, \$1000.
 { What amount was due on April 6, 1928?

- 12 **2.** A person holding 200 shares of Bank Stock quoted at $185\frac{1}{8}$ and paying 10% dividends sells out and uses the proceeds in buying the maximum amount of Mercantile Stock at $98\frac{7}{8}$ which pays 6% dividends. Brokerage was $\frac{1}{8}$ in each case. Find the alteration in his annual income.

- 12 **3.** Brown and Jones are partners. Brown invests \$2400 for 5 months and then increases his investment to \$4400 for 5 months. Jones invests \$4000 for 6 months and then withdraws \$1000. At the end of 10 months they dissolve partnership, having resources amounting to \$11,460. What is each partner's share of the resources?

- 11 **4.** A building is assessed for $\frac{4}{5}$ of its value and the tax rate is 35 mills. It costs \$105.00 premium to insure the building for $\frac{2}{3}$ of its value, the rate of premium being $1\frac{3}{4}\%$. Find the amount of the tax.

[OVER]

Values.

- 12 **5.** { The expense of constructing a railway was \$2,000,000, of which two-fifths was borrowed on mortgage at 5% and the balance held in shares. What must be the average weekly receipts so as to pay the shareholders 4%, the expenses of working the road being 55% of the gross receipts?
- Either* {
- Or* { Wheat loses 16% of its weight when ground into flour but the weight of bread is $133\frac{1}{3}\%$ of the weight of flour used. How many 12 oz. loaves of bread can be made from 25 bu. of wheat?
- 10 **6.** The difference between the solar time of Calgary and Toronto is 2 hr. 18 min. 30 sec. If longitude of Calgary is $114^{\circ} 1' 48''$ W, what is the longitude of Toronto?
- 10 **7.** { The surface of a sphere is 1386 sq. in. and that of a cube 1536 sq. in. Find the difference in their volumes.
- Either* {
- Or* { A circle has a radius of 12 in. Find the area between two parallel chords each of which subtends an angle of 90° at the centre of the circle.
- 11 **8.** The lower portion of a stack is in the form of a frustum of a cone with the end of shorter diameter below. The upper part of the stack is in the form of a cone. The total height of the stack is 18 ft. and the length of its greatest circumference is 44 ft. The perpendicular height of the frustum is 8 ft. and the circumference of its base 22 ft. Find the number of tons in the stack, allowing 500 cu. ft. to the ton.
- 10 **9.** A block of land has the shape of a triangle with sides 6784 yd., 4932 yd., and 7238 yd. in length. Find by logarithmic calculation the area of this block to the nearest acre.

log	94.77	=	1.97667
log	4.545	=	.65754
log	269.3	=	2.43024
log	2,239	=	3.35005
log	2	=	.30103
log	11	=	1.04139
log	332.9	=	2.52241